

All District Engineers

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Special Provision for Impact Attenuators

April 21, 2006

This special provision was developed by the Bureau of Design and Environment to combine "Sand Module Impact Attenuators" and "Traffic Barrier Terminal Type 3, Special" into one specification. All of these devices are now called Impact Attenuators and are categorized by their operational/redirective properties. This revised approach is also reflected in BDE Procedure Memorandum 34-06, Impact Attenuators and the Department's Approved List of Impact Attenuators.

This special provision has been revised to create a new category of "resettable" impact attenuators which have a lower expected life cycle repair and maintenance costs.

This special provision should be included on all contracts using impact attenuators in a permanent application.

Note: This special provision supercedes both the Recurring Special Provision, "Traffic Barrier Terminal Type 3, Special" and the BDE Special Provision, "Sand Module Impact Attenuators"; hence, those pay items should no longer be used.

The districts should include the BDE Check Sheet marked with the applicable special provisions for the August 4, 2006 and subsequent lettings. The Project Development and Implementation Section will include a copy in the contract.

This special provision will be available on the transfer directory April 21, 2006.

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IMPACT ATTENUATORS (BDE)

Effective: November 1, 2003

Revised: August 1, 2006

Description. This work shall consist of furnishing and installing impact attenuators of the category and test level specified.

Materials. Materials shall meet the requirements of the impact attenuator manufacturer and the following:

Item	Article/Section
(a) Fine Aggregate (Note 1).....	1003.01
(b) Steel Posts, Structural Shapes, and Plates	1006.04
(c) Rail Elements, End Section Plates, and Splice Plates	1006.25
(d) Bolts, Nuts, Washers and Hardware	1006.25
(e) Hollow Structural Tubing	1006.27(b)
(f) Wood Posts and Wood Blockouts.....	1007.01, 1007.02, 1007.06
(g) Preservative Treatment.....	1007.12

Note 1. Fine aggregate shall be FA-1 or FA-2, Class A quality. The sand shall be unbagged and shall have a maximum moisture content of five percent.

CONSTRUCTION REQUIREMENTS

General. Impact attenuators shall meet the testing criteria contained in National Cooperative Highway Research Program (NCHRP) Report 350 for the test level specified and shall be on the Department's approved list. Fully redirective and partially redirective attenuators shall also be designed for bi-directional impacts.

Installation. Regrading of slopes or approaches for the installation shall be as shown on the plans.

Attenuator bases, when required by the manufacturer, shall be constructed on a prepared subgrade according to the manufacturer's specifications. The surface of the base shall be slightly sloped or crowned to facilitate drainage. For sand modules, the perimeter of each module and the specified mass (weight) of sand in each module shall be painted on the surface of the base.

Impact attenuators shall be installed according to the manufacturer's specifications and include all necessary transitions between the impact attenuator and the item to which it is attached.

Method of Measurement. This work will be measured for payment as each, where each is defined as one complete installation.

Basis of Payment. This work, will be paid for at the contract unit price per each for IMPACT ATTENUATORS (FULLY REDIRECTIVE, NARROW); IMPACT ATTENUATORS (FULLY REDIRECTIVE, WIDE); IMPACT ATTENUATORS (FULLY REDIRECTIVE, RESETTABLE); IMPACT ATTENUATORS (SEVERE USE, NARROW); IMPACT ATTENUATORS (SEVERE USE, WIDE); IMPACT ATTENUATORS (PARTIALLY REDIRECTIVE); or IMPACT ATTENUATORS (NON-REDIRECTIVE), of the test level specified.

Regrading of slopes or approaches will be paid for according to Section 202 and/or Section 204 of the Standard Specifications.

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